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ABSTRACT

Certain aspects of the reading process have suggested that second language reading skills are determined to some extent by native language reading skills. Some of this research is reviewed here and an experiment is described in which the reading skills in Spanish and English of three groups of Spanish speakers learning English are compared. Comprehension tests were given to each of the groups. Two articles from "The Readers Digest," one in English and one in Spanish, were used for the speech comprehension tests, and cloze tests were used to measure intensive reading comprehension. It is shown that the highest English proficiency group had a strong significant correlation between reading skills in the two languages, the middle group had a slight correlation, and the beginners had no correlation. It is concluded that reading for meaning is a skill which is non-language-specific and so is transferred to a foreign language that is being learned. (Author/AMH)

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THE TRANSFER OF READING SKILLS FROM FIRST TO SECOND LANGUAGE: THE REPORT OF AN EXPERIMENT WITH SPANISH SPEAKERS LEARNING ENGLISH

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

The subject of this study is the relationship between first and second language reading skills. Ability to read a foreign language is often assumed to be a function of the student's proficiency in the foreign language in terms of vocabulary knowledge; however, certain aspects of the reading process, as revealed by experimental results, have suggested to some researchers that second language reading skills are at least in part determined by native language reading skills.

Any research into the process of second language reading is severely hampered by the current lack of knowledge concerning how native language reading occurs. While massive amounts of research have been done in the field of reading during the past two decades, the issue of what reading is and how it is accomplished, remaines extremely clouded. Several fairly diverse descriptions of the reading process have been presented, and are supported by different camps of reading researchers. (Hatch; et. al., 1974 and Goodman, 1968)

In this paper I wish to avoid most of the controversy which pervades native language reading theory and focus instead on one aspect of reading: the possibility of ability transfer between languages. Thus the main body of the paper deals with an experiment devised to measure the relationship between first and second language reading skills. I will also present a theory of reading which, while often conjectural in nature, can be extrapalated to explain why reading is not a language specific skill, but rather a general one.

Suprisingly, little work has been done concerning the influence of native language reading on foreign language reading, although educators

as early as Michael West (West, 1931) have suggested the existence of a general reading skill, which is transferable, under the proper conditions, to a new language being learned. As a prelude to my experiment, I will outline the previous experimental work done which is directly applicable to the theory of inter-language reading ability transfer.

Throughout this paper, the term "reading" is to be defined as the process of extracting meaning from the printed page. Thus I am not dealing with any of the various subskills, such as decoding individual words, which are sometimes referred to as "reading". Since I am interested in reading as an information gathering process, any abilities which are sometimes coincidental with the extraction of meaning, for example oral reading, will not be considered here. Thus when I use the term "good reader", I an in reality referring to a "good comprehender", since I am viewing comprehension as the essence of the reading process.

READING THEORY

Since reading is a very conplex process, much of the reading research done has tended to focus on specific segments of that process, rather than on the process taken as a whole. For example, Gough's model (1972) deals primarily with letter recognition. The "highest" level of reading which he discusses is pronunciation of individual words. Thus his model is essentially a treatment of simple decoding of letters and individual words.

For my study, I feel it is necessary to view reading on a somewhat larger scale. The most popular current model of reading is that presented by Goodman (1968). Frequently referred to as "analysis by synthethis" or "reading by guessing", Goodman's model stresses the importance of linguistic structures larger than the word in reading. Goodman tends to concentrate on comprehension of meaning, and regards pronouncing individual letters and words as a low level skill, not to be confused with true reading.

Goodman gives three "proficiency levels" at which reading can take place:

Level 1:	Graphic input	re-coding →	aural input	re-coding →	oral language	de-coding →	meaning	
Level 2:	Graphic input	aural input	re-coding →	oral language	de-coding →	meaning		
Level 3:	Graphic input	de-coding →	meaning.					

However, according to Goodman, "good" or efficient reading takes place only at the third level.

The category labelled "graphic input" varies from one proficiency level to the next. At level one the reader is focussing on letters, letter patterns and word shapes. The length of the graphic sequence perceived growns, until at level three the reader focusses on large sequences. In Goodman's opinion, it is precisely this perception of written material in long sequences which permits the reader to decode directly to meaning, without recourse to oral language.

Some researchers (Miller, 1971) contend that below level three, "reading" is not actually occurring. As a sentence is more than a linear sum of its words, a reader who focusses on the individual words of a sentence has no hope of de-coding that sentence's meaning, no matter how well he "understands" the words. It is the interaction of the words that a reader must grasp.

Within Goodman's model of reading, the relative importance of vocabulary knowledge in the reading process diminishes. This is important, since a non-native reader, at an intermediate knowledge or above of the foreign language, probably differs most from a native speaker in the paucity of his vocabulary.

Goodman's model of reading at level three presents a picture of reading as a very rapid series of guesses based upon various "cue systems" present in written language. He lists three such cue systems, which function simultaneously and interdependently as the reader decodes: (1) graphophonic, (2) syntactic and (3) semantic. These three systems are often very redundant, with both inter- and intrasystem redundancy usually existing. This redundancy allows the reader to de-code from quite incomplete graphic input. He is thus not even limitted to the length of the graphic sequences upon which he is able to focus.

In Goodman's terms, a good reader initially edits out most redundancies. The more efficient the reader, the more editting takes place. Goodman sees good reading as a continuous process consisting of four steps: (1) sampling, (2) predicting, (3) testing, and (4) confirming. During these four processes, clues from all three cue systems are constantly being digested and used.

Thus we have a model of a good reader as one who is adept at this four-step process. It should be noted that this process is not language specific, but general. Thus a reader can apply this process to any language being read. Naturally, the more complete a reader's knowledge of the vocabulary and structure of the language being read, the more chance his predictions will be accurate. However, with this model an "exhaustive" knowledge of the language is not a necessary condition for good reading to occur. Logically it shouldn't be, since no native speakers know their language exhaustively.

Golinkoff, who has investigated the reading comprehension of skilled and unskilled readers in their native language (1975/6), feels that the over-all process of reading for meaning can be divided into three subskills: (1) decoding, defined as pronouncing or recognizing the word. (2) lexical access, defined as remembering the meaning of the word, and (3) text organization, in which the reader extracts meaning from sequences longer than single words. Under this categorization, a non-native reader will be most deficient in subskill (2) lexical access, as he will not have meanings for all the words in his limited vocabulary. However Golinkoff's research has shown that with native speakers, good and poor readers differ primarily in subskills (1) and (3), which are less language specific than (2).

Thus the "analysis by synthesis" model of reading portrays the reader as a very active participant in the reading porcess. The reader utilizes a variety of subskills whose over-all effect is to form a judgement concerning the meaning of the passage being read, which is confirmed as he progresses. The importance of this model for the purposes of my study lies in its view of the reader as being skilled or un-skilled depending only to a minor degree on his language specific knowledge, such as the size of his vocabulary.

PRIOR EXPERIMENTS

While experimental research into the possibility of inter-language reading ability transfer has not been abundant, several projects have yielded positive results.

An experiment conducted by M.H. Al-Rufai, at the University of Baghdad dealt with the relationship between comprehension skills in Arabic and in English (1976). Prompted by the poor reading comprehension exhibited by the University students in both languages, Al-Rufai established a program of "coaching" in reading comprehension. As the comprehension problems were primarily with getting the implied or inferencial meaning from reading passages, the 30 students participating were given intensive practice in English reading comprehension, for a period of two terms.

At the end of the two term "coaching" period, the students again took a series of reading comprehension tests in both languages, of the type which had originally pinpointed their comprehension problems. Al-Rufai reports that the reading comprehension of every student was significantly improved in both Arabic and English. Thus it is evident that the increase in English reading comprehension which resulted from the intensive coaching in English, transferred to the student's Arabic reading abilities. Al-Rufai concludes: (240)

> "...the approach to the teaching of reading comprehension in a foreign language must be seen in connection with the teaching of reading comprehension in the mother tongue.."

However Al-Rufai tempers this advice with the following constraint: (p. 239)

> "...reading skills and habits can be improved by training and are transferable from one language to another. But, it should be noted, the transfer could only take place when the languages in question were used with ease by the readers."

Another experiment, this time in Indonesia, is reported on by J. Bismoko and I. S. P. Nation (1977). The two languages involved were English and Indonesian. This provides an important experimental condition, since although Indonesian is the national language of the country, it was not the native language of the majority of the subjects, who were students at a teacher-training college in Yogyakarta. The subjects were from the English and Education departments of the college.

The experiment concerned reading speed improvement, although the reading passages used were always followed by comprehension questions. The test group read two initial English passages as a test. For the next ten weeks, two Indonesian passages were read per week, for a total of twenty Indonesians passages. Two final English passages were given as a final test. The control group read only the four initial and final English test passages. All passages were between 675 and 775 words in length.

The results obtained are quite impressive. For the English department students, there was a gain of 65% in Indonesian reading speed and a gain of 75% in English reading speed. For the Education department students, the gains were 54% in Indonesian and 72% in English. Bismoko and Nation conclude: (88)

> "Where English is taught as a second language it would seem desirable for a variety of reasons, several of them not directly pedagogical, to give speed reading training in the national language or the mother-tongue."

Thus we have two experiments which dealt with two distinct aspects of reading, comprehension and speed, and two distinct language groups, Arabic and Indonesian, yet yielded very similar results. In the first case, second to first language skill transfer occurred, and in the second case, first to second (or second to third) language skill transfer was

observed. From these results, a picture of reading as a non-language specific skill emerges.

HYPOTHESIS + TESTS DEVISED

My basic hypothesis is that reading is a non-language specific skill, so that a good reader in his native language will also be a good reader in a second language. The experiments presented by Al-Rufai and Bismoko and Nation support this hypothesis strongly, in that they show that an increase in reading skill in one language, be it native or second, is readily (and automatically) transferred to another language.

Nevertheless, both these studies dealt with subjects who had good control of English, since they were at very advanced levels in their study of English. While Bismoko and Nation do not discuss the issue of second language proficiency, Al-Rufai assumes that the reading skill transfer he describes is possible only if the subjects "...use with ease..." (239) both languages in question. Therefore the second part of my hypothesis concerns this constraint, which I feel is too severe.

Thus it is my claim that a student's native language reading skills affect his second language reading ability from quite early on in his second language study. It is obvious that an extreme beginner whose vocabulary is so restricted that he knows only a small percentage of the words in a text, will not be able to benefit from any transfer of native language reading skills. But it is my contention that even students below the advanced level of second language study, who do not as yet "use the language with ease", will benefit (or suffer) from the influence of their native language reading skills when they read in the second language.

In this experiment I tested students of ESL who are classified as beginning, intermediate, and advanced - intermediate learners of English, to determine whether a significant positive correlation exists between

their native language reading skills and their English reading skills. These students are not at a level where English is used fluently, and are currently studying English intensively in order to reach a proficiency level where they will be capable of handling a normal course-load of academic subjects.

I devised a series of reading tests to measure their reading skills in English and Spanish, which was the subject's native language. It is generally accepted (Gibson and Levin, 1975) that as reading is a complex skill, any assessment of reading ability should be based on a variety of types of reading tests. Many types of reading tests tend to measure other abilities besides reading. For example, short term memory skills are frequently tapped by "reading comprehension" tests. I wished to avoid this danger and attempted to devise tests which would get at reading skills only.

Accordingly, the first set of tests I used were designed to measure reading speed and over-all comprehension. It has often been noted (Anderson and Swanson, 1937) that a good reader adapts his reading style to the situation at hand, while a poor reader is incapable of such adaption. Thus in the speed/comprehension tests, my subjects were given a very specific task. They were given an article of about 2,500 words and asked to read it for the general plot as fast as they could and still maintain a reasonable level of comprehension. They were advised that details would not be tested in the comprehension check which would follow and so they should read rapidly.

I chose two articles from The Readers Digest, one in English and one in Spanish, to use for the speed/comprehension tests. Both were examples of leisure-reading material. Both had straight-forward, chronologically-

ordered plots. Neither was particularly "culturally-slanted" against Latin Americans. For each column of each reading, I wrote a simple, multiple-choice comprehension question, in Spanish. The questions always dealt with the main point of the particular column, so that inability to answer a question would indicate that the column had either not been read, or had been totally missunderstood. All questions were in Sapnish so as to avoid any potential trouble the subjects might have with understanding the questions.

For the second set of reading tests I chose to use Cloze tests, one in English and one in Spanish. Once again, The Readers Digest was my source. Each Cloze test was about 200-250 words in length. I chose the passages from the introductory portion of the articles, so that, although brief, they are self-contained. I chose to use Cloze tests as part of my experiment because although they are a completely different task than the speed/comprehension tests, they are generally accepted to be excellent measures of intensive reading comprehension. (Oller, 1973, p. 106)

> "[Cloze tests are] ... useful measures of reading comprehension....correlations of .80 and above, with standardized tests of reading comprehension."

Thus I hoped that the two sets of tests, Cloze and speed/comprehension, would complement each other and together give a more rounded view of the subjects' reading skills.

The next problem which arose was how to score the Cloze tests, since several choices are available. I decided to use the "exact word" method for the Spanish passages, which had every fifth word deleted.(Oller, 108):

> "...the most commonly used scoring method with native speakers is to count incorrect any word but the exact

> word deleted....it has been shown to provide as much information with native speakers as other methods which accept synonyms for the exact words as well."

I also decided to limit the time in which the subjects were allowed to work on the passage to seven minutes. While time limits are not a normal part of Cloze testing procedure, I wished to obtain a wide range of scores and placing a time limit on a task is one way of separating those who can easily accomplish it from those who can't.

With the English passage, which had every seventh word deleted, all responses which were grammatical and semantically "fit" the passage were accepted. (Oller, 109)

> "...with non-native speakers the method of allowing any contextually acceptable response is significantly superior to the exact word scoring technique."

It became apparent that the English Cloze test would doubtless prove to be rather difficult for many of the subjects, so lengthy time limit of twenty minutes was placed on the test. As it turned out, the full time was not used by the subjects.

SUBJECTS

The subjects used in this study were the native Spanish speakers studying at levels 1, 3 and 7 (roughly: beginning, intermediate, and advanced intermediate English proficiency) at the University of Pittsburgh's English Language Institute (ELI). I divided the subjects into three English proficiency levels, according to which of the levels (1, 3, or 7) they were studying at in the ELI. ELI students are placed in these three levels primarily on the basis of their Michigan scores, but other factors are also considered, such as an English writing sample, previous performance in the ELI, and ability to communicate orally during an interview conducted in English.

My subjects were thus divided into the following three groups: Groups 1, consisting of eight subjects (ELI level 7) had a Michigan score range of .58 to .79. Group 2, (ELI level 3) eleven subjects, with a Michigan score range of .39 to .57 and Group 3, (ELI level 1), nine subjects with Michigan scores between 32 and 49.

TABLE 1

	Group 1	Group 2	Group 3
N	8	11	9
ELI level	7	3	1
Michigan range	58-79	39-57	32-49

* (Since the English task was inherently more difficult than the Spanish one, only every seventh word was deleted from the English passage to provide more context. Normal Cloze procedure calls for deletion of every fifth, sixth or seventh word.)

The subjects in all three groups ranged in age from about 18 years old to about 35 years old. Their education level (in their native country) ranged from high-school graduates to those who had completed the equivalent of a Masters degree. All the subjects were native Latin Americans. Several spoke other languages besides Spanish with varying degrees of fluency.

TESTING PROCEDURE

All the reading tests were administered during the subjects' regular lab classes. The Group subjects were tested in one group, as were the Group 3 subjects. The Group 2 subjects, however, were not all in the same lab class, so they were tested in two separate groups. Group 1 and 2 were tested on the same day, and Group 3 was tested four days later. All subjects in Groups 1 and 2 had been cautioned not to discuss the tests with anyone outside of their own test group, after taking the tests. I administered the tests to Groups 2 and 3. Another ELI teacher administered the tests to Group 1. All procedures, however, of the administration of the test ramained the same in all cases.

The subjects were told that they would be participating in an experiment, rather than having their normal laboratory class that day. The purpose of the experiment was briefly explained, as an investigation of the relationship of the ability to read in the native language, and second language reading ability. They were reassured that the results would have no effect on their ELI grades, but were asked to try to perform each task to the best of their ability. All the subjects seemed quite willing to participate.

The first test was the Spanish speed test (SS). The subjects were instructed to read the article for the main plot, as rapidly as possible. They were told that some simple comprehension questions would follow. The nature and source of the article was explained; that it was a story from The Readers Digest and thus was leisure reading material, which would normally be read comparatively rapidly. The subjects wer advised as to the time limit of five minutes for reading the article before they began

reading.

After the five minute reading period was completed, the subjects noted how many columns of the article they had completed reading and answered the corresponding multiple choice comprehension questions, which were also in Spanish. There was one question per column of the article, and they were required to answer questions only on that portion of the article which they had completed. If they had only halfway completed a column when the "stop reading" command was given, they were instructed to note that on their paper and attempt to answer the question corresponding to the half-completed column. No time limit was placed on the answering of the comprehension questions, and all subjects finished within 3-5 minutes. They were not allowed to refer back to the article while doing the questions.

The next test was the English speed test (ES). The identical procedure as outlined above for the Spanish Speed test was followed in the administration of the English Speed test. The only difference was in the reading time limit, which was lengthened to eight minutes, so as to obtain a wider range of scores. Once again, speed and comprehension of the main plot of the story were stressed in the directions given. The subjects were advised that the subsequent comprehension questions would be in Spanish, although the article itself was in English.

The next test was the Spanish Cloze test (SC). The subjects were told they would be given a brief, one-page article, in Spanish, in which every fifth word had been deleted and replaced with a blank. They were instructed to read through the article and write in the word which had originally been in each blank. They were told they would have seven minutes to complete the task.

The final test was the English Cloze test (EC). The directions given were the same as those for the Spanish Cloze test, but that this time the article would be in English, and with every seventh word deleted. They were told they had twenty minutes to fill in the blanks with the words which had originally appeared in the passage. It should be noted that while most of the subjects said they could have used more than the seven minutes allocated to the Spanish Cloze test, all gave up on the English passage before the twenty minute limit was up.

The only variation in the testing procedures among the groups tested was in the language in which the directions were given. With Group 1, only English was used, since the subjects had no difficulty understanding what was being required of them. On the other hand, with Group 3, who were low in English proficiency, the procedures were explained in Spanish. With the intermediate Group 2, a mixture of Spanish and English was used. However, in all cases the subjects appeared to understand the tasks at hand, before beginning them.

SCORING METHOD

The Spanish and English articles used for the speed tests contained (respectively) twelve and ten roughly equivalent length columns. The scores were obtained by following this procedure: The number of columns read by each subject was multiplied by a fraction representing his performance on the comprehension questions, to give the whole number score which appears on the data sheet. For example, if a subject read 6 columns, he was required to answer the first 6 questions. If he missed one question, however, his adjusted score would be 6x5/6 = 5. Had he answered all 6 questions correctly, his score would have been 6x6/6= 6.

I used this method of scoring in order to weed out any subjects who might go racing through the reading passages, without actually reading them. It should be remembered here that the nature of the comprehension questions was such that if a subject had really read the column, picking the correct answer should have been an easy task. Each question focused on the main plot development outlined in the corresponding column.

However, most subjects missed at most only one question per passage, and often this question missed was on the final column read, or only partially read. Thus the adjusted score which appears on the data sheet for each speed test represents the number of columns "read and understood" by the subject.

The score listed for the Spanish Cloze test is the number correct (That is, the number of filled-in words indentical to those in the original passage, since "exact scoring" was used.) The total number of Cloze items in the Spanish Cloze test was 27.

For the English Cloze test, two scores were given on the data sheet. The first, labelled EEC was the number correct, using exact scoring as was applied to the Spanish Cloze test. The second score, EAC, was the number correct, using approximate scoring. As discussed earlier in this paper, approximate scoring allows any word which fits the blank both semantically and grammatically to be counted as correct. I was the judge of what was acceptable and what was not acceptable, using this scoring method. The total number of Cloze items in the English passage was 25.

The Michigan test has a range of 0-100, but is considered to be unreliable for scores lower than 40. The subjects in Groups 1 and 2, as part of standard ELI procedure, had all taken the Michigan test, under standatd conditions, during mid December or early January, that is about 2 months prior to the reading tests. The subjects in Group 3 had all taken the Michigan test sometime during the month prior to the taking of the reading tests.

TABLE II - raw acores of all S's on all testing measures.

#	-	subject number
ES	-	English Speed score
SS	-	Spanish Speed score
SC	-	Spanish Cloze score = x/27
EEC	-	Exact English Cloze score = x/25
EAC	-	English Approximate Cloze score = x/25
MS	-	Michigan score

Group 1 - (level 7, ELI)

#	ES	SS	SC	EEC	EAC	MS
01	7	8	09	05	06	58
02	4	3	10	06	09	61
03	4	3	15	12	17	79
04	3	3	11	05	08	65
05	4	3	17	13	17	75
06	2	2	16	11	13	62
07	7	8	15	12	14	75
08	6	5	15	17	10	67

Group 2

#	ES	SS	SC	EEC	EAC	MS
13	4	7	14	06	09	53
14	4	4	11	10	11	50
15	5	2	08	09	13	57
16	4	1	10	06	07	54
17	7	9	10	09	11	51
18	5	5	09	04	10	53
19	3	2	03	04	05	42
20	4	3	13	08	11	50
21	7	5	10	04	04	39
22	4	7	13	04	07	46
23	3	4	13	05	07	48

Group 3

#	ES	SS	SC	EEC	EAC	MS
26	4	4	09	07	10	46
27	2	8	15	06	10	38
28	4	3	09	05	06	45
29	2	4	09	04	06	39
30	4	4	11	05	07	32
31	3	5	10	03	06	32
32	2	3	15	00	01	32
33	4	5	16	08	12	49
34	4	5	12	02	01	40

STATISTICAL ANALYSIS OF DATA

For the scores within each group, the Pearson's product - moment coefficient of correlation was computed for the various pairs of scores. This is the most frequent kind of correlation coefficient used, and is obtained by applying the formula (Guilford, 1965):

$$rxy = \frac{Exy}{N6 \times 6y}$$

where:
- rxy = the correlation between x and y.
- x = the deviation of any x score from the mean in test x.
- y = the deviation of the corresponding y score from the mean in test y.
- Exy = the sum of all the products of deviations, each x deviation time the corresponding y deviation.
- 6x and 6y = the standard deviation of the distributions of the x and y scores.

In order that the correlations could be checked across all three groups, a first order partial coefficient of correlation was done, in which the variable MS was held constant, thereby removing the effect of English proficiency. The formula used for this is:

$$r_{12.3} = \frac{r_{12} - r_{13}\, r_{23}}{(1-r^2_{13})\ (1-r^2_{23})}$$

In order that a composite "reading ability" score could be obtained for each subject, in each language, a "T - test" was applied to each score. This yields a range of scores with a median of 50 and standard deviation of 10. Thus these formed values can be added and the correlation of Composite English Reading Ability with Composite Spanish Reading Ability

can be found. This was done within each group and also across all three groups, once again, with the variable MS (English proficiency) being controlled for.

TABLE III - results of inter-measure correlations.

Group	Tests	Correlation (r)	Significance (p<)
1	ES - SS	.9439	.001
2	ES - SS	.4825	.066
3	ES - SS	-.2651	.245
1	ES - MS	.0528	.451
2	ES - MS	-.0847	.402
3	ES - MS	.4891	.091
1	EAC - SC	.8576	.003
2	EAC - SC	.1866	.291
3	EAC - SC	.1120	.387
1	EAC - MS	.8660	.003
2	EAC - MS	.8023	.001
3	EAC - MS	.5673	.056

Across all 3 groups, with MS controlled for:

ES - SS	.5330	p<.002
EAL - SC	.2529	p<.102

TABLE IV

Composite E and S scored (ie., the sum of the normed values ES + EAC, and SC + SS)

Group	Correlation (r)	Significance (p<)
1	.8446	.004
2	.2993	.191
3	.0136	.486

Composite E and S scores, across all 3 groups, with MS controlled for: (ie., partial correlation)

r = .2960 p1 .067

DISCUSSION OF RESULTS

Group 1, classified as advanced-intermediate learners of English, and whose Michigan scores ranged from 58 to 79, showed a strong positive correlation between Spanish and English reading skills. The correlation coefficients of .9439 for speed/comprehension and .8576 for the Cloze tests for this group were also highly significant, as shown by the p factors of <.001 and .003, respectively. In addition to the Cloze scores, the composite reading scores in Spanish and English were also correlated well with r = .8446 and significant to .004 for Group 1.

For Group 2, the composite scores showed a slight positive correlation of .2933, but as the p was only 191, this tendency did not achieve a level of significances. If we examine the forrelation coefficients for the two subtests are computed separately, this correlation between the measures of the 2 different languages reveals r = .4825 with p < .066 for speed/comprehension, and r = .1866 with p < .291 for the Cloze tests. Thus the speed/comprehension tests for the intermediate level students, whose Michigan scores ranged from 39 to 57, did showa positive though nonsignificant correlation. However, it should be remembered that the number of subjects in each test group was rather small (11 for group 2), which tends to restrict the ability to obtain significant correlations in the results. Therefore it is probably safe to assume that given a larger test group, the group 2 speed/comprehension tests in English and Spanish would show a significant correlation.

The Group 3 results show no significant correlations between either of the Spanish and English reading tests.

The result of the first order partial correlation, when the Michigan score was partialed out was .5330 for the speed/ comprehension tests and was significant ($p < .002$). This means that when the effect of varying English proficiency is removed from the scores, a substantial positive correlation between English and Spanish reading speed/comprehension was found across the 3 groups. However the corresponding correlation of the Cloze scores was not significant ($p < .102$)

The composite English and Spanish reading scores across the three groups showed a slight positive correlation of .2960 when English proficiency was controlled for. Nevertheless, the p value of .067 is too large to be considered significant, particularly since the size of the test group was 25 subjects, which is large enough to show a significant correlation, if one existed.

CONCLUSIONS

The results of this study confirm the classification of reading for meaning as a skill which is non-language-specific and is thus transferred to a foreign language learned. As was expected, the correlation between first and second language reading skills becomes stronger as the student gains proficiency in the second language. Most importantly, the correlation between the reading skills in the two languages is very strong at the advanced-intermediate level, that is, well before the student can be termed "fluent" in the second language.

It should be noted that all English materials used for the reading tests: - this experiment were intended for native speakers. This means that the subjects in Group 2 and particularly those in Group 3, knew only a small percentage of the vocabulary in readings. Yet in Group 2, a correlation still appeared. I feel it is quite possible that a repitition of this experiment with Groups 2 and 3, using materials just slightly more advanced that their English proficiency level warrants, rather than using un-edited readings intended for natives, would yield a significant correlation for both groups.

There is also an indication from those results that the ability to read rapidly with reasonable comprehension is a skill which transfers more readily to a second language than the more intensive skill involved in doing a Cloze test. Thus it is possible that rapid reading is a high level reading skill which separates decent readers from (extremely) good ones.

This is a particularly important point, considering the test population of this experiment. All the subjects were high school graduates,

which indicates that probably none of them are substantially deficient in native language reading skills. The same experiment, testing a normal cross-section of the population would undoubtly yield a far more diverse spectrum of reading skills in both languages.

The conclusion which should be drawn from this experiment is apparent. Second language reading teachers should be sensitive to the existence of a general reading skill. A student who is experiencing difficulty with reading comprehension in a second language, after reaching the intermediate level of language study should be checked for native language reading proficiency. If a general reading comprehension problem exists, it is undoubtly simpler to attack it in the native language, where the added tensions inherent in second language study are absent. According to the studies cited in this paper (Al-Rufai, and Bismoko and Nation) such remedial work in the native language should automatically transfer to the second language reading skills.

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